**Midterm Project: Topic Proposal**

**Title:** *Examining the Relationship Between Demographics, Admission Types, and Clinical Outcomes in New York Inpatients (Niagara County)*

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**Proposal:**  
Hospital resource utilization and patient outcomes are critical concerns for both healthcare providers and policymakers. Understanding how insurance type, demographic factors, and admission category affect outcomes such as length of stay and hospital charges can help hospitals optimize resource allocation, improve patient care, and identify potential disparities in healthcare access.

To identify a suitable dataset for analysis, our team reviewed multiple publicly available health data sources, including the CDC NHANES 2021–2023 dataset, the NY Health SPARCS database, and additional open-access repositories. The *Hospital Inpatient Discharges (SPARCS De-Identified): 2012* dataset from the New York State Department of Health was selected for its comprehensiveness and analytical potential. We focused on Niagara County, producing a subset with approximately 21,075 observations and 34 features, including patient demographics, insurance type, diagnosis, procedures, hospital charges, and length of stay. Relevant features will be used depending on each SMART research question.

**SMART Research Questions:**

1. Did Medicare patients have, on average, at least 15% longer hospital stay than Private Insurance patients in 2012?
2. Were Medicaid patients’ total hospital costs 10% higher than those with Private Insurance in 2012?
3. Did elderly patients (70+) stay 25% longer than patients aged 30–49 in 2012?
4. Did emergency admissions result in 30% longer hospital stays than elective ones in 2012?

**Dataset Link:**

<https://health.data.ny.gov/Health/Hospital-Inpatient-Discharges-SPARCS-De-Identified/u4ud-w55t/about_data>

**GitHub Repository:**

<https://github.com/Simintaj-Salehpour/Data-Divas>